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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/881,272	06/13/2001	Ching-Fang Lin	USP1556A-GNC	6823

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David and Raymond Patent Group  
1050 Oakdale Lane  
Arcadia, CA 91006

EXAMINER

DESIRE, GREGORY M

ART UNIT	PAPER NUMBER
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2625

DATE MAILED: 10/06/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/881,272

Applicant(s)

LIN, CHING-FANG

Examiner

Gregory M. Desire

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9 and 12 is/are rejected.
- 7) ☒ Claim(s) 7, 8, 10, 11 and 13-23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-6, 9 and 12 rejected under 35 U.S.C. 102(e) as being anticipated by Burman (6,075,891).

Regarding method claim 1 Burman discloses,

Receiving a hyper spectral image cube (which read on object image note Fig. 1, 102), wherein said hyper spectral image cube represents a scene in terms of wavelength and spatial position (note col. 3 lines 39-42, examiner interprets the data samples of the object image to read on hyper spectral image cube, data sample corresponding to reflectance or emission of photons at some frequency as wavelength and the pixel data inherently has position information);

Selecting a material of interest from a target database (which read on trained input data, fig. 1 block 140), wherein said material interests represents a target for target detection and identification (note col. 4 lines 59-61, lines cite database storing

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materials of interest, once a target is stored the accessing of said target is the selection (note col. 5 lines 3-5);

Selecting a trial pixel having a predetermined location in said hyper spectral image cube (which reads on pixel extraction section, fig. 1 block 120), wherein said target detection and identification is performed on said trial pixel (note col. 3 lines 37-39, pixel extraction, extracts spectral data from a single pixel, the examiner interprets the single pixel as trial pixel. This single pixels is than used for further processing (note col. 3 lines 42-44));

Building a set of reference signatures (which reads on material categorization, fig. 1 block 150) which comprises a signature of said selected material of interests and a plurality of signatures of a plurality neighboring pixels of said selected trial pixel (note col. 3 lines 45-49, categorization identifies the combination of signatures and end members with pixel signature, examiner interprets as building of reference signature which includes plurality of signatures of a plurality of neighboring pixels);

Applying an abundance estimator (which reads on spectral unmixing, fig. 1 block 160) to perform an abundance estimation using measurement data corresponding to said selected trial pixel and said set of reference signatures (note col. 3 lines 53-60, performs abundance estimation from data from material categorization, selected pixel and set of reference signatures).

Regarding method claim 2 Burman discloses,

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Wherein said neighboring pixels include a left pixel of said selected trial pixel, a top pixel of said selected trial pixel, a right pixel of said selected trial pixel, and a bottom pixel of said selected trial pixel (Burman discloses neighboring neurons col. 6 lines 15-24, which is a specific category (note col. 5 lines 60-63). These trained data are based on signatures that were extracted from pixels. Thus examiner interprets fig. 6 as showing neighboring pixels, input spectral signature examiner interprets as trial pixel surrounding in the left, right top and bottom).

Regarding method claim 3 Burman discloses,

Wherein said neighboring pixels further include a left-top corner pixel of said selected trial pixel, a right-top corner pixel of said selected trial pixel, a right-bottom corner pixel of said selected trial pixel and a left bottom corner of said selected trial pixel (Burman discloses neighboring neurons col. 6 lines 15-24, which is a specific category (note col. 5 lines 60-63). These trained data are based on signatures that were extracted from pixels. Thus examiner interprets fig. 6 as showing neighboring pixels, input spectral signature examiner interprets as trial pixel surrounding diagonal, left top, right top, right bottom corner and left bottom corner).

Regarding method claim 4 Burman discloses,

Wherein said abundance estimator is a maximum likelihood estimator (note col. 7 lines 51-65, examiner interprets estimator representing percentage abundance as likelihood estimator).

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Regarding method claim 5 Burman discloses,

Wherein said abundance estimator is a least square estimator (note col. 8 lines 53-57, Burman cites least square estimate of the abundance estimator).

Regarding method claims 6, 9 and 12 Burman discloses,

Wherein said abundance estimator is an evolutionary estimator (note col. 6 lines 46-50, Burman uses evolutionary computing process).

### ***Allowable Subject Matter***

3. Claims 7-8, 10-11 and 13-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: The claims further limit the abundance estimator. The limitations claimed is not taught in the prior art

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory M. Desire whose telephone number is (703)

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308-9586. The examiner can normally be reached on M-F (8:30-6:00) Second Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Gregory M. Desire  
Examiner  
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G.D.  
September 25, 2004